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Program and Extended Abstracts

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The impact of farming system on Sudanese camel milk production

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Introduction

Sudan ranks second country in the world on Camel population. According to last estimation of Camel's in Sudan there are 3.908 million heads (Ministry of Animal Resource and Fisheries, 2005). Milk production of camels in drought regions is a valuable source of food for the human population in these areas. In most pastoral systems, the main target of camel herding is to satisfy the family's demand of milk. In Sudan the camel herders are in a continuous move in response to availability of grazing and water supplies and camel milk is one of the main components of their basic diet. Milk yield fluctuates at a low level considerably from time of abundance to time of acute scarcity of feed and water. The aim of this study was to investigate the effect of improved management system on camel milk yield.

Material and Methods

Twenty lactating she-Camels of the Sudanese Arabi breed were selected randomly at late pregnancy from nomadic herd in North Kordofan State (Western Sudan). The experimental animals were divided into two equal groups 10 she-camels each. Group 1 was managed after calving in a semi intensive system**:** animals were herded during night in closed pens and set free during midday, in addition of natural pasture supplementation consisted of 2 kg concentrates and 5 kg roughages per head per day allowanced, water *ad libitum,* health care, external and internal parasites control was practiced. Group 2 was served as a control, was managed traditionally. On this system the animals are brought to grazing areas where they select food by themselves from the available plants and allowing nothing as supplement feeding, with the exception of offering salt, and water regime (6-7 days) was applied. The collection of milk samples (N = 480) were started at 15 days post partum and continued for 12 successive months

in biweekly intervals twice a day (approximately 12 hours interval). Hand milking was applied**.** The milker approaches the she-camels from the left side. Two teats are milked and leaving the remaining two teats for suckling by calf. The milk yield was estimated directly after milking by using measuring cylinders with an accuracy of 5 ml. The milk yield registered and total milk yields per annum were estimated. This amount represent approximately a half of the total milk yield. Over the total experimental period and according to herders practice the traditional *Sorrar* technique was used**:** To prevent the calf from suckling two teats are tied up with a soft tape of cloth removed only at milking time. Every day the position of tied up teats were change to avoid the she-camels udder harmful.

Results

The average daily milk yields were 6.85 ± 1.32 l/day and 3.14 ± 0.66 l/day for semi-intensive and traditional system, respectively (Fig.1). The results indicated that the trend of daily milk yield increased significantly ($P<0.05$) after calving until reach the peak in the 13th week post partum in both systems and then declined gradually through the lactation period. The maximum average daily milk yield was 8.7 ± 0.94 l/day and 4.30 ± 0.59 l/day in semi-intensive and traditional system, respectively. The increase of milk yield under traditional system in the week 29th is due to the availability of green fodder during rainy season in the study area. Daily milk yield range was varying between 3.7 - 10 l/day in semi-intensive system, on the other hand the range of daily milk production of the camel reared under traditional management was 1.8 -5.2 l/day.

Improving management system highly significantly ($P<0.01$) affected total milk production. The calculated milk yield per year was 2633 l/animal and 1204 l/animal on semi-intensive and traditional system, respectively. The actual milk secreted is higher than the recorded figures presented in this study, because the calves have access to the mothers during the whole day and are suckling faster than the milker is milking.

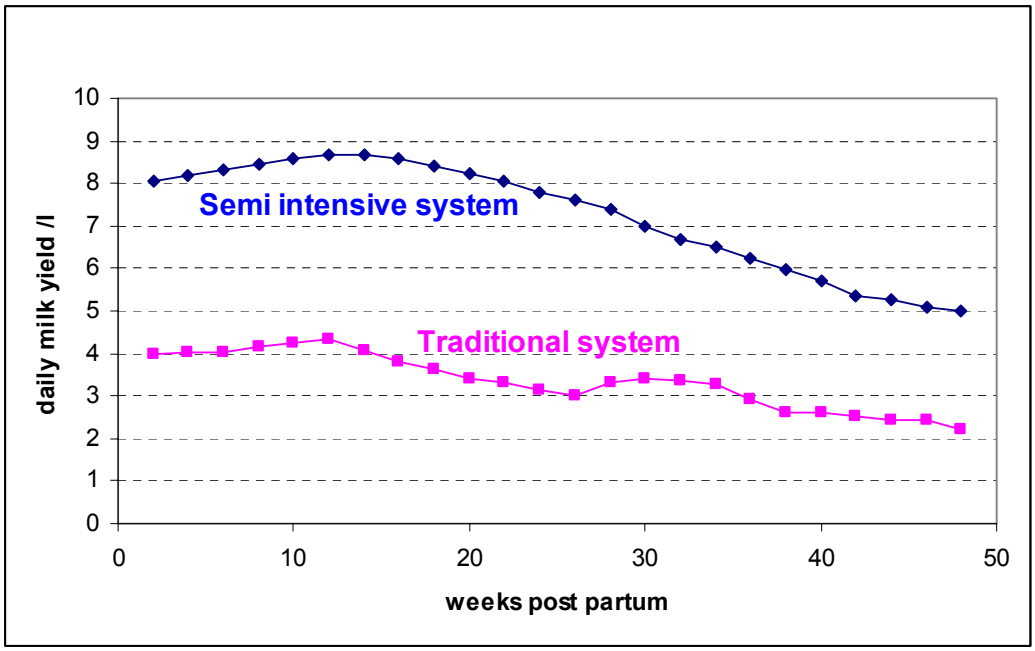

Figure 1: Average Camel milk yield under semi intensive and traditional management (l/day)

Conclusion

Camels raised under semi-intensive management were able to produce significantly more milk than the other reared under traditional system. This is attributed to the forage availability and the supplementary diets, water availability and health care that oriented to the camels in the semi intensive system. It was evident from the data that Farming system has significant impact on daily and total camel milk yield. Improving management increased milk yield 2.3 times from that producing under traditional management, which reflect good advantages to the calf and family livelihood.